

WHAT IS CLAIMED:

1. A device for impregnating web with an impregnating agent, comprising:

a coating device structured and arranged to apply the impregnating agent to the web; and

a wide nip calender located, with respect to a web travel direction, before said coating device, said wide nip calender comprising a circulating jacket and a back pressure element arranged to form a wide nip.

2. The device in accordance with claim 1, wherein the impregnating agent comprises a starch solution or other coating agents commonly used in paper upgrading.

3. The device in accordance with claim 2, wherein the starch solution comprises a starch size.

4. The device in accordance with claim 2, wherein the web comprises one of a paper or cardboard web.

5. The device in accordance with claim 1, wherein the impregnating agent is applied to a web having a basis weight over 40 g/m².

6. The device in accordance with claim 1, wherein, between said wide nip and said coating device, no other web processing devices are provided.

7. The device in accordance with claim 6, wherein at least one guide device is arranged between said wide nip and said coating device.

8. The device in accordance with claim 1, wherein said wide nip calender further comprises a heating device.

9. The device in accordance with claim 8, wherein said heating device is formed by said back pressure element.

10. The device in accordance with claim 8, wherein said heating device comprises a surface structured to guide the web through said wide nip, and said surface having a temperature adjustable to at least 200°C.

11. The device in accordance with claim 1, wherein said coating device comprises a film press.

12. The device in accordance with claim 1, further comprising a drying area located downstream of said coating device.

13. The device in accordance with claim 12, wherein said wide nip is heated to a temperature higher than a temperature in said drying area.

14. The device in accordance with claim 1, wherein said wide nip is adjustably heated to at least a plasticizing temperature of web fibers of the web.

15. The device in accordance with claim 1, further comprising a reeling device arranged downstream of said coating device, wherein no glazing device is arranged between said coating device and said reeling device.

16. A process for impregnating web with an impregnating agent, comprising:

applying the impregnating agent to the web;

before the applying of the impregnating agent, pressing the web in a wide nip formed between a circulating jacket and a back pressure element.

17. The process in accordance with claim 16, wherein the impregnating agent comprises a starch solution or other coating agents commonly used in paper upgrading.

18. The process in accordance with claim 17, wherein the starch solution comprises a starch size.

19. The process in accordance with claim 17, wherein the web comprises one of a paper or cardboard web.

20. The process in accordance with claim 16, wherein the impregnating agent is applied to a web having a basis weight over 40 g/m².

21. The process in accordance with claim 16, further comprising pressing the impregnating agent into the web at a location downstream of the wide nip.

22. The process in accordance with claim 21, wherein the impregnating agent is pressed into the web by an application device for the impregnating agent.

23. The process in accordance with claim 16, further comprising heating the web in the wide nip.

24. The process in accordance with claim 23, wherein the web is heated in the wide nip to a temperature sufficient to plasticize web fibers of the web.

25. The process in accordance with claim 16, wherein the impregnating agent is applied in a contour coating.

26. A process of impregnating a web with an impregnating agent, comprising:

pressing the web in a wide nip; and

drawing impregnating agent into the web, downstream of the wide nip relative to a web travel direction, via capillary action of the web.

27. The process in accordance with claim 26, further comprising pressing the impregnating agent into the web downstream of the wide nip.

28. The process in accordance with claim 26, further comprising plasticizing web fibers of the web in the wide nip.

29. The process in accordance with claim 26, further comprising heating the web in the wide nip at a temperature greater than in a dryer section located downstream of the wide nip.

30. The process in accordance with claim 26, wherein the web is pressed in the wide nip to produce a uniform web density.

31. The process in accordance with claim 26, wherein the impregnating agent is applied to a web having a basis weight over 40 g/m^2 .

32. The process in accordance with claim 31, wherein the impregnating agent is applied to a web having a basis weight over 90 g/m^2 .